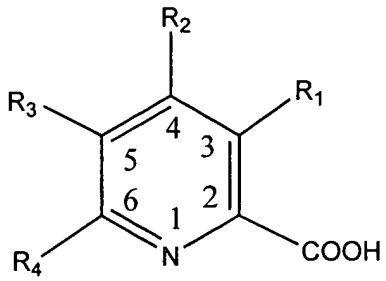
PENDING CLAIMS[1]

U.S. PATENT APPLICATION NO. 09/784,631

13. (Once Amended) A pharmacologically active metal ion chelating agent adapted for treatment of a disease, disorder, or condition selected from the group consisting of hepatitis C infections, angiogenesis, sun burn, metastatic colon cancer and upper respiratory infections, wherein the disease, disorder or condition is mediated by a protein having a metal ion-protein complex, the agent having the following structure:



or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, R_3 or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen, and wherein when said agent is adapted for the treatment of sunburn, the agent is not zinc picolinate.

14. The metal ion chelating agent of claim 13 wherein R_3 is a butyl group.

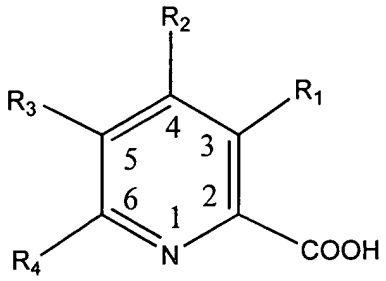
15. The metal ion chelating agent of claim 13 wherein said metal is zinc.

[1] If the amendments are accepted by the Examiner.

16. The metal ion chelating agent of claim 13 further comprising at least one of a pharmacologically suitable isotonic vehicle, a pharmacologically effective and physiologic saline vehicle and a nebulizing agent.

17. The metal ion chelating agent of claim 13 wherein R_1, R_2, R_3 and R_4 are hydrogen.

18. (Once Amended) A pharmacologically active metal ion chelating agent adapted for treatment of a disease, disorder, or condition selected from the group consisting of hepatitis C infections, angiogenesis, sun burn, inflammation associated with acne, metastatic colon cancer and upper respiratory infections, wherein the disease, disorder or condition is mediated by a protein having a metal ion-protein complex, the agent having the following structure:



or a pharmacologically acceptable salt thereof,

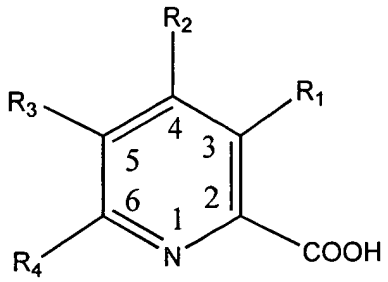
wherein R_1, R_2, or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen; and

R_3 is a butyl group.

19. The metal ion chelating agent of claim 18 wherein said metal is zinc.

20. The metal ion chelating agent of claim 18 further comprising at least one of a pharmacologically suitable isotonic vehicle, a pharmacologically effective and physiologic saline vehicle and a nebulizing agent.

21. (Once Amended) A method for comprising administering an effective amount of a pharmaceutical composition comprising a metal ion chelating agent to an individual having at least one disease, disorder or condition selected from the group consisting of metastatic colon cancer, hepatitis C infections, angiogenesis, sun burn, and upper respiratory infections, the metal ion chelating agent represented by the following structure:



or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, R_3, or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen.

22. The method of claim 21 wherein R_3 is a butyl group.

23. The method of claim 21 wherein said pharmaceutical composition is administered in the range of about 500 mg twice per day to about 2000 mg per day.

24. The method of claim 21 wherein said pharmaceutical composition further comprises a pharmacologically suitable isotonic vehicle.

25. The method of claim 24 wherein said pharmaceutical composition is an intranasal solution comprising in the range between about 0.01 mM to about 50 mM said metal ion chelating agent and at least one said pharmacologically suitable isotonic vehicle.

26. The method of claim 25 wherein said intranasal solution comprises in the range between about 0.1 mM to about 20 mM said agent.

27. The method of claim 26 wherein said intranasal solution comprises about 3mM said metal ion chelating agent.

28. The method of claim 21 wherein said pharmaceutical composition is a systemic medicament comprising in the range of about 1% to about 100% said metal ion chelating agent and a pharmacologically acceptable carrier.

29. The method of claim 28 wherein said pharmaceutical composition is in capsule form.

30. The method of claim 21 wherein said pharmaceutical composition further comprises at least one nebulizing agent.

31. The method of claim 30 wherein said pharmaceutical composition is an inhalant comprising in the range between about 0.001% to about 50% metal ion chelating agent and said nebulizing agent.

32. The method of claim 30 wherein said nebulizing agent is at least one nebulizing agent selected from a group consisting of water and saline.

33. The method of claim 21 wherein said pharmaceutical composition further comprises a topical lotion.

34. The method of claim 33 wherein said pharmaceutical composition is a formulation for the treatment of sunburn and comprises in the range between about 1% to about 99% said metal ion chelating agent and said topical lotion.

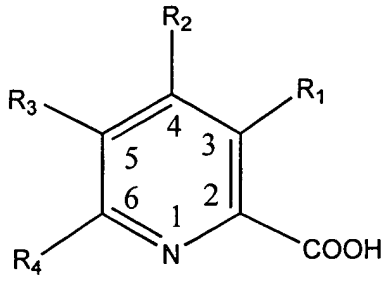
35. The method of claim 34 wherein said pharmaceutical composition comprises in the range between about 5% to about 15% of said metal ion chelating agent.

36. The method of claim 31 wherein said pharmaceutical composition is an ophthalmic preparation for the control of angiogenesis and said pharmaceutical composition comprises in the range between about 0.01% to about 99% said metal ion chelating agent and a pharmacologically acceptable carrier.

37. The method of claim 36 wherein said pharmaceutical composition comprises in the range between about 5% to about 10% said metal ion chelating agent.

38. The method of claim 31 wherein R_1, R_2, R_3 and R_4 are hydrogen.

39. (Once Amended) A method comprising administering an effective amount of a pharmaceutical composition comprising a metal ion chelating agent to an individual having at least one disease, disorder or condition selected from the group consisting of metastatic colon cancer, hepatitis C infections, angiogenesis, sun burn, inflammation associated with acne and upper respiratory infection, the metal ion chelating agent represented by the following structure:



or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine and hydrogen; and

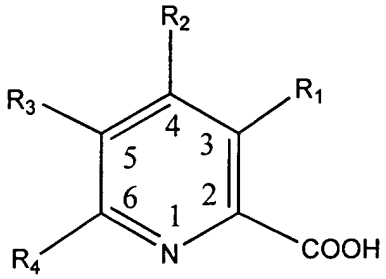
R_3 is a butyl group.

40. The method of claim 39 wherein said pharmaceutical composition further comprises a topical lotion.

41. The method of claim 40 wherein said pharmaceutical composition is a formulation for the treatment of inflammation associated with acne and comprises in the range of between about 1% to about 99% metal ion chelating agent and said topical lotion.

42. The method of claim 41 wherein said pharmaceutical composition comprises in the range of about 5% to about 15% of said metal ion chelating agent.

43. (Once Amended) A systemic preparation comprising approximately 1% to approximately 100% metal ion chelating agent and a pharmacologically acceptable carrier, wherein said metal ion chelating agent is represented by the following structure:



or a pharmacologically acceptable salt thereof,

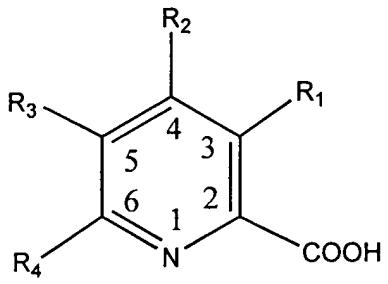
wherein R_1, R_2, R_3 or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen, and wherein said agent is not zinc picolinate.

44. The systemic preparation of claim 43 wherein said route of administration is a capsule.

45. The systemic preparation of claim 43 wherein R_3 is a butyl group.

46. The systemic preparation of claim 43 wherein R_1, R_2, R_3 and R_4 are hydrogen.

47. A systemic preparation comprising approximately 1% to approximately 100% metal ion chelating agent and a pharmacologically acceptable route of administration, wherein said metal ion chelating agent is represented by the following structure:

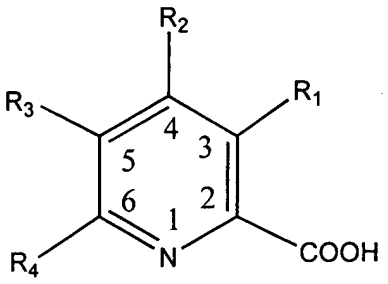


or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, or R_4 is selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen; and

R_3 is a butyl group.

48. (Once Amended) An intranasal solution from about 0.01 mM to 50 mM metal ion chelating agent and at least one pharmacologically suitable isotonic vehicle, said metal ion chelating agent represented by the following structure:



or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, R_3 or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen, and wherein said agent is not zinc picolinate.

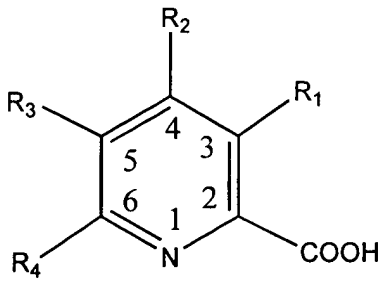
49. The intranasal solution of claim 48 wherein R_3 is a butyl group.

50. The intranasal solution of claim 48 comprising in the range between about 0.1 mM to about 20 mM said metal ion chelating agent.

51. The intranasal solution of claim 50 comprising approximately 3mM of said metal ion chelating agent.

52. The intranasal solution of claim 48 wherein R_1, R_2, R_3 and R_4 are hydrogen.

53. An intranasal solution comprising in the range between about 0.01 mM to about 50 mM metal ion chelating agent and at least one pharmacologically suitable isotonic vehicle, said metal ion chelating agent represented by the following structure:



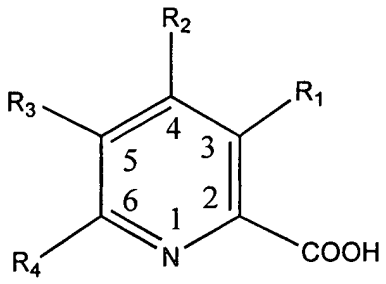
or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, or R_4 is selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group,

isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen;

and R_3 is a butyl group.

54. An inhalant comprising in the range of between about 0.001% to about 50% metal ion chelating agent and at least one nebulizing agent, wherein said metal ion chelating agent is represented by the following structure:



or a pharmacologically acceptable salt thereof,

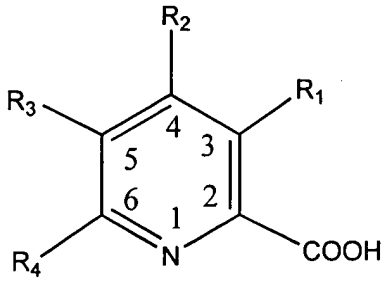
wherein R_1, R_2, R_3 or R_4 is selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen.

55. The inhalant of claim 54 wherein R_3 is a butyl group.

56. The inhalant of claim 54 wherein said nebulizing agent is at least one nebulizing agent selected from a group consisting of water and saline.

57. The inhalant of claim 54 wherein R_1, R_2, R_3 and R_4 are hydrogen.

58. An inhalant comprising in the range of between about 0.001% to about 50% metal ion chelating agent and at least one nebulizing agent, wherein said metal ion chelating agent is represented by the following structure:

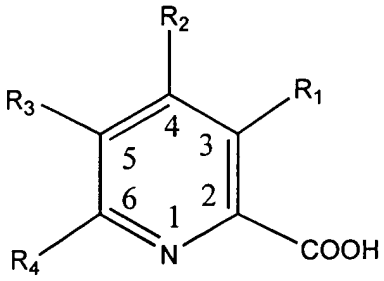


or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, or R_4 is selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen; and

R_3 is a butyl group.

59. (Once Amended) A formulation adapted for the treatment of sunburn comprising from about 1% to about 99% metal ion chelating agent and a topical lotion, wherein said metal ion chelating agent is represented by the following formula:



or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, R_3 or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl

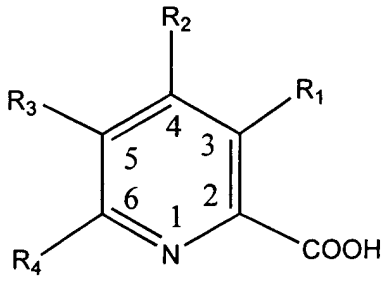
group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen, and wherein said agent is not zinc picolinate.

60. The formulation of claim 59 comprising in the range of between about 5% to about 15% of said metal ion chelating agent.

61. The formulation of claim 59 wherein R_3 is a butyl group.

62. The formulation of claim 59 wherein R_1, R_2, R_3 and R_4 are hydrogen

63. (Once Amended) A formulation adapted for the treatment of inflammation associated with acne and sunburn comprising from about 1% to about 99% metal ion chelating agent and a topical lotion, wherein said metal ion chelating agent is represented by the following structure:



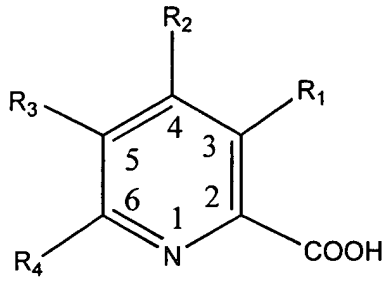
or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, or R_4 is selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen; and

R_3 is a butyl group.

64. The formulation of claim 63 comprising in the range of between about 5% to about 15% of said metal ion chelating agent.

65. (Once Amended) An ophthalmic preparation adapted for the control of angiogenesis comprising in the range between about 0.01% to about 99% metal ion chelating agent and a pharmacologically acceptable carrier, wherein said metal ion chelating agent is represented by the following formula:



or a pharmacologically acceptable salt thereof,

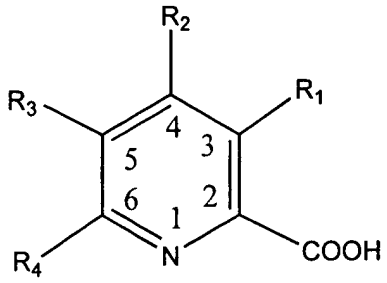
wherein R_1, R_2, R_3 or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen.

66. The ophthalmic preparation of claim 65 wherein R_3 is a butyl group.

67. The ophthalmic preparation of claim 65 comprising in the range of about 5% to about 10% said metal ion chelating agent.

68. The ophthalmic preparation of claim 65 wherein R_1, R_2, R_3 and R_4 are hydrogen.

69. (Once Amended) An ophthalmic preparation adapted for the control of angiogenesis comprising from about 0.01% to about 99% metal ion chelating agent and a pharmacologically acceptable carrier, wherein said metal ion chelating agent is represented by the following formula:

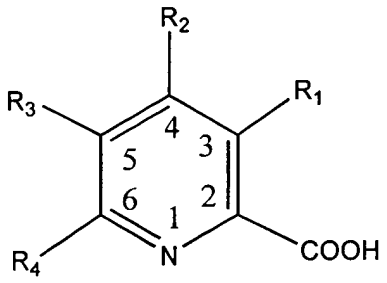


or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen; and

R_3 is a butyl group.

70. (Once Amended) A lavage comprising at least one metal ion chelating agent represented by the following structure:



or a pharmacologically acceptable salt thereof,

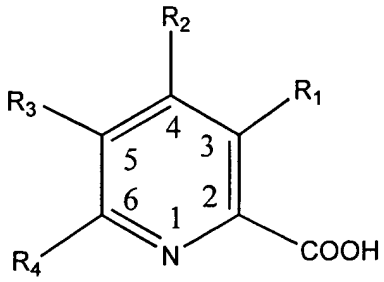
wherein R_1, R_2, R_3 or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen.

71. The lavage of claim 70 comprising about 20% said metal ion chelating agent.

72. The lavage of claim 70 wherein R_3 is a butyl group.

73. The lavage of claim 70 wherein R_1, R_2, R_3 and R_4 are hydrogen.

74. (Once Amended) A lavage comprising at least one metal ion chelating agent represented by the following structure:

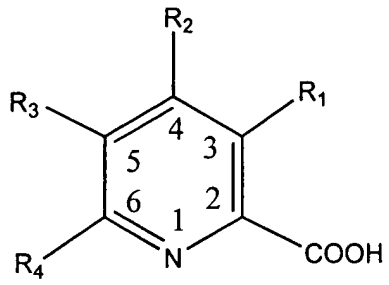


or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen; and

R_3 is a butyl group.

75. (Once Amended) A preservative comprising a metal ion chelating agent, said metal ion chelating agent represented by the following structure:



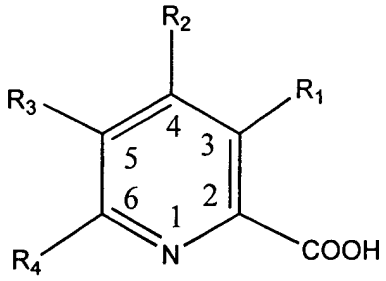
or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, R_3 or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen.

76. The preservative of claim 75 wherein R_3 is a butyl group.

77. The preservative of claim 75 wherein R_1, R_2, R_3 and R_4 are hydrogen.

78. (Once Amended) A preservative comprising a metal ion chelating agent, said metal ion chelating agent represented by the following structure:



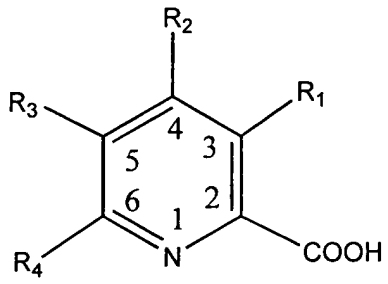
or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group,

butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen; and

R_3 is a butyl group.

79. (Once Amended) A method of preserving an item comprising contacting the item with a metal ion chelating agent, said metal ion chelating agent represented by the following structure:



or a pharmacologically acceptable salt thereof,

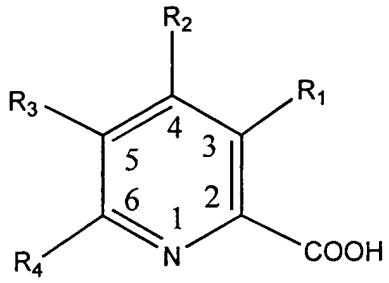
wherein R_1, R_2, R_3 or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen.

80. The method of claim 79 wherein R_3 is a butyl group.

81. (Once Amended) The method of claim 79 wherein said step of contacting said item with said metal ion chelating agent comprises contacting said item with a composition comprising said metal ion chelating agent in a concentration of less than about 0.025% by weight.

82. The method of claim 79 wherein R_1, R_2, R_3 and R_4 are hydrogen.

83. (Once Amended) A method of preserving an item comprising contacting said item with said metal ion chelating agent, said metal ion chelating agent represented by the following structure:



or a pharmacologically acceptable salt thereof,

wherein R_1, R_2, or R_4 are independently selected from the group consisting of a peptide of sixteen amino acids, carboxyl group, methyl group, ethyl group, propyl group, isopropyl group, butyl group, isobutyl group, secondary butyl group, tertiary butyl group, pentyl group, isopentyl group, neopentyl group, fluorine, chlorine, bromine, iodine, and hydrogen; and

R_3 is a butyl group.